

## **REMARKS**

### **I. Amendment to the Specification**

The Examiner has objected to the abstract of the disclosure as using legal phraseology “means”. Accordingly, a replacement abstract is enclosed, which is deemed to be in keeping with the Rules, removing the objectionable term and eliminating the last sentence, to reduce the number of words to less than 150. Further, in view of the amendments to Claim 8, “during one or more sets of questions” has been changed to “during a plurality of sets of questions” and at the very end, “limited number” has been changed to “plurality.”

### **II. Amendment to the Claims**

Upon entry of the foregoing amendment, eighteen (18) claims are pending in the application. Of the pending claims, three (3) claims are independent. As discussed below, Claim No. 1 has been amended to incorporate the subject matter from Claims 2 and 5, which have been cancelled. Claim 7 has been cancelled due to redundancy of the subject matter with Claim 1 as amended. Claim 8 has been amended to more clearly and accurately define the invention. Claims 3, 18 and 19 have been amended to depend now from the amended Claim 1. In Claim 18, “storing a predetermined plurality of questions” has been changed to “storing a plurality of questions” and “, during any of a plurality of scored and/or unscored sets of questions,” has been deleted for clarity and simplicity of the claim language. Punctuation corrections have been made to Claims 8 and 16.

### **III. Claim Rejections under 35 U.S.C. § 102(b)**

***Claims 8 and 10***

The Examiner has rejected independent Claim 8 and Claim 10, which depends from Claim 8, as being anticipated by Cameron et al (U.S. Pat. No. 5,632,624) (Cameron '624). The reference cited by the Examiner as disclosing the missed-questions memory recited in Claim 8, Cameron '624, col. 5, lines 26-29, states, "At the end of the test, the user may also select to review all the questions which were answered wrong or were left unanswered." This contemplates reviewing the missed questions from only the single most recent test, *ie.* the previous set of questions.

As a point of practical significance, Cameron's device does not allow comprehensive review of problems missed in multiple tests—let alone comprehensive review of problems missed in multiple tests and/or practice exercises. In the case of Cameron, review of missed problems is possible only prior to the beginning of the next test. For a number of reasons, there is significant value in the capability of practicing missed questions after more than one test or exercise has been performed: The time period during which the user can review missed problems is not terminated by the performance of a subsequent test, or—viewed another way—the user is not prevented from performing additional tests or practice exercises if the user needs to practice problems missed in the most recently-completed test or practice exercise. Memorization of the correct answers to missed problems is obviously aided by repeated practice that is not limited to a short period of time following when the problems were missed. Furthermore, especially if the user tends to miss few problems, it may be more beneficial and efficient for the user to practice problems missed in a plurality of tests and/or exercises. Again, in Cameron, if the user wants to practice at a later time problems that he has missed in a particular test, he is prevented in the meantime from using the device to do additional tests.

Claim 8, as amended, requires, *inter alia*, that the missed-questions memory store “a plurality of questions that, during a plurality of sets of questions, were answered incorrectly or were not answered within a per-question time limit”. Accordingly, Applicant respectfully submits that Cameron ‘624 cannot anticipate Claim 8, as amended, or the claims properly depending therefrom, because it does not disclose, nor even suggest, a missed-questions memory that stores memory from more than a single set of questions. As such Applicant requests that the refusal of Claim 8 be withdrawn.

As to Claim 10, in addition to the arguments presented with respect to Claim 8, Cameron ‘624 does not disclose a question engine that “can, from the same group of questions stored in said missed-questions memory, develop and communicate to said user a plurality of scored sets of questions,” as required in this claim. Cameron ‘624 discloses only that the user “may also select to review all the questions which were answered wrong or were left unanswered” (col. 5, lines 27-29), and that, in this regard, the engine can “repeat questions with wrong answers” (Fig. 7, S250). This language does not disclose the ability to develop and communicate a *plurality* of scored sets of questions from a missed-questions memory. Rather, Cameron ‘624 only discloses the ability to develop and communicate a single set of questions from a missed-questions memory, namely the set of questions consisting of those incorrect or unanswered questions from the immediately previous test. Moreover, as soon as that single set of questions has been communicated and scored by the invention disclosed in Cameron ‘624 (necessarily by means of the “test mode”), it is automatically erased from memory as a result of its being replaced by a new set of missed questions. Consequently, the invention can test a particular set of missed questions only once. Accordingly, Applicant respectfully submits that Cameron ‘624 neither anticipates nor renders obvious Claim 10 and requests that the refusal of Claim 10 be withdrawn.

#### **IV. Rejections under 35 U.S.C. § 103(a)**

##### ***Claim 1***

Applicant has amended Claim 1 to incorporate the subject matter previously presented in Claims 2 and 5, which Applicant has cancelled with the amendment submitted herewith. The Examiner rejected original Claims 2 and 5 under 35 U.S.C. §103(a) as being unpatentable over Cameron '624 as modified by Thomas '182. The Examiner asserts that it would have been *prima facie* obvious to one of skill in the art to have further modified the teachings of Cameron '624 as modified by Thomas '182 to display evaluative scores and related information one score at a time because such a modification would have been considered a mere design consideration.

Under MPEP §§ 706.02(j) and 2143.03, in order to establish a *prima facie* case of obviousness, the cited references must, *inter alia*, teach or suggest all of the claimed limitations. The references cited by the Examiner do not teach or suggest a display that “displays said evaluative scores and related information one score at a time.” The Examiner has attempted to overcome this deficiency by noting that this limitation is “merely a design consideration” and that Applicant “has not disclosed that displaying the scores one at a time solves any stated problem or is for any particular purpose.” However, Applicant’s specification makes clear that the display of evaluative scores and related information is not merely a “design consideration” and explicitly sets forth the purpose of displaying the plurality of evaluative scores one at a time.

As set forth in Applicant’s specification, the display of evaluative scores and related information one score at a time facilitates the display of extensive and important information related to a user within the limited display space available in a portable handheld device. Paragraphs [0351]-[0352], of Applicant’s application read in part:

The preferred embodiment satisfies the prerequisite of “supervisability” without compromising affordability or portability.... [D]espite its display’s limited size (dictated by the need for affordability and portability), the device communicates this information rapidly and very understandably by displaying it only one problem set at a time. In short, limited memory and limited display size are used in an efficient and novel manner to communicate ample and up-to-date evaluative information.

These performance-evaluation-communication features make it relatively easy and convenient for a parent or teacher to ensure that a child has used the learning aid as instructed—even when a substantial amount of work has been performed when the parent or teacher has not been physically or mentally present. The child is aware of the child’s inability to fool a parent or teacher in this regard and of the ease with which the parent or teacher can check on the amount, nature and quality of the child’s work. Consequently, provided that the consequences of not making a good faith effort are appropriate and clearly communicated, the child is much more likely to make such an effort.

As made clear in the application ([0278]-[0302]), extensive important information is displayed with each problem set, including the following, among other things: the number of problems attempted; the number of problems answered correctly; the percentage of attempted problems answered correctly; the particular “learning activity” (mode) that governed how problems were presented; the amount of time that elapsed during the set (in the case of the “Timed Practice,” “Timed Test” or “Special Problems” learning activity); the applicable per-problem time limit (in the case of the “Timed Flashcards” learning activity); the applicable arithmetic operation (in the case of all the learning activities except for the “Special Problems” activity); the “Level” of difficulty (in the case of the “Timed Practice,” “Timed Test” and “Timed Flashcards” activities), the “Table” number (in the case of the “Table: In Order” or “Table: No Order” activity), and a number from 1 to 9 indicating how recently the set was performed compared to the other sets whose results are being stored.

As noted in the passage above, this claimed feature enhances the invention’s “supervisability” by making it easier for a user or a supervising teacher or parent to quickly

comprehend a lot of important information relating to a substantial amount of work performed by the user during numerous exercises despite the necessarily small size of the learning aid's display.

Examiner has stated on page 7 of the action, regarding Claims 2 and 5 (the subject matter of which is now incorporated into Claim 1) that "it appears the electronic study guide of Cameron et al. as modified by Thomas would perform equally well when displaying multiple evaluative scores at once." Perhaps this is true of Cameron's study guide, as modified by Thomas, since its evaluative scores would have been accompanied by minimal additional information (Thomas discloses only one other variable being displayed with evaluative scores, namely the number of the question set relating to each score (Fig. 5B)). **The relevant question, however, is whether the same statement can be accurately made about the invention described in the amended Claim 1, and the answer is clearly "no."** If the invention now described in Claim 1 displayed evaluative scores all at one time, they would not perform equally well because of the amount of related information that needs to be displayed with each evaluative score and the necessarily limited space to do so within the confines of a display of a portable device –let alone do so intelligibly or even legibly.

As all of the claimed limitations are not taught or suggested by the art cited by the Examiner, Applicant respectfully submits that a *prima facie* case of obviousness has not been presented with respect to Claim 1, which has been amended to incorporate the subject matter previously presented in Claims 2 and 5. Accordingly, Applicant respectfully requests that the refusal of Claim 1 be withdrawn.

### *Claims 3, 6 and 7*

The Examiner has rejected Claims 3, 6 and 7 under 35 U.S.C. §103(a) as being unpatentable over Cameron '624 as modified by Thomas '182. The Examiner asserts that Claims 3, 6 and 7 are obvious because Thomas '182 "teaches storing results in a non-volatile memory (i.e. diskette and tape), which by its very nature is not erased when the system is turned off (see col. 3, lines 62-66." Claim 7 has been cancelled as explained above. Thus, the rejection of Claim 7 is now moot.

Under MPEP §§ 706.02(j) and 2143.01 to establish a *prima facie* case of obviousness, there must be, *inter alia*, some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. With respect to Claims 3 and 6, the Examiner states only that "[i]t would have been obvious to one of ordinary skill in the art at the time the invention was made to store any data in non-volatile memory in order to retain stored information even when not powered."

The proper inquiry when making an obviousness determination is "whether there is something in the prior art as a whole to suggest the *desirability*, and thus the obviousness, of making the combination." See MPEP § 2143.01(I), citing *In re Fulton*, 391 F.3d 1195, 1200-01, 73 USPQ 1141, 1145-46 (Fed. Cir. 2004). Larger devices such as the computer contemplated by Thomas '182 use memory storage mediums that require more space, and would generally be impractical for use in a handheld device, such as the claimed learning device. Providing non-volatile memory capable of functioning in such a handheld device would increase cost and complexity of such a device.

Thus, without an indication of a benefit of using such non-volatile memory in the claimed hand-held device, it would not have been obvious to incur the additional expense and complication of providing non-volatile memory. No such indication of art suggesting the desirability of combining non-volatile memory with the claimed portable learning aid has been made. Accordingly, Applicant respectfully submits that a *prima facie* case of obviousness has not been presented and requests that the rejection of Claims 3 and 6 be withdrawn.

***Claim 4***

The Examiner has rejected Claim 4 under 35 U.S.C. §103(a) as being unpatentable over Cameron '624. Applicant respectfully submits that Claim 4 properly depends from Claim 1 and respectfully requests this claim be allowed for at least the same reasons presented with regard to Claim 1 in Section IV(A), *supra*.

***Claims 9 and 11***

The Examiner has rejected Claims 9 and 11 under 35 U.S.C. §103(a) as being unpatentable over Cameron '624. Applicant respectfully submits that Claims 9 and 11 properly depend from Claims 8 and 10, respectively, and requests these claims be allowed for at least the same reasons presented with regard to Claims 8 and 10 in Section III, *supra*.

***Claims 12-15 and 20***

The Examiner has rejected Claims 12-15 and 20 under 35 U.S.C. §103(a) as being unpatentable over Cameron '624 in view of Hardy (U.S. Pat. No. 5,203,705) (Hardy '705). The Examiner notes that according to Hardy '705 "[a]fter the game is complete a list of previously incorrectly played words is generated." Applicant respectfully disagrees with this characterization of Hardy '705. The passage cited by the Examiner (Fig. 4; col. 7, lines 11-67) does not disclose storing or generating a list of incorrectly played words *after the game is*



*complete*. Rather, this passage refers only to processes within and between turns of a single game (see e.g. col. 7, lines 11, 26-27 and 57-59).

The Examiner also contends that “[t]he device [of Hardy ‘705] checks for previous incorrect plays, implying that the device stores missed-questions when powered off.” Applicant respectfully disagrees with this contention as well. As noted above, the discussion of the passage cited by the Examiner relates to processes within and between turns of a single game. Furthermore, Hardy ‘705 teaches that “[w]hen the personal user list is employed during any game sub-mode, words that are missed by the player are repeated with greater frequency than words which are not missed.” See col. 6, lines 45-48. Combined with the fact that Hardy ‘705 teaches a two player sub-mode (*i.e.* Hangman, see col. 6, lines 12-20), a conclusion that the device disclosed in Hardy ‘705 stores missed questions when powered off, or even after a new game is started, is inconsistent with the disclosure of Hardy ‘705, because such a conclusion would require that one of the two players participating in Hangman is subjected to questions missed by another player. Accordingly, the implication of Hardy ‘705 is that the device does not store missed questions beyond a single game. As such, and in addition to the arguments presented in support of Claims 8-11, on which Claims 12-15 respectively depend, Applicant respectfully submits that Claims 12-15 are not obvious and requests that the rejection of such claims be withdrawn.

#### ***Claim 20***

For the same reasons as discussed above regarding Claims 12 – 15, the addition of Hardy et al to the teachings of Cameron et al do not render the subject matter of Claim 20 to be obvious as presently claimed.

### ***Claims 16, and 19- 21***

The Examiner has rejected Claims 16, 19 and 21 under 35 U.S.C. §103(a) relying on Hardy '705 and noting that Hardy '705 discloses that "[q]uestions that are repeatedly missed by a user are more likely to be presented to the user more frequently (see col. 6, lines 45-49)." Each of Claims 16 and 19-21 include the limitation, "a question-probability selector operably associated with said question engine and arranged to allow a user to select one of a plurality of question-probability settings...."

Hardy '705 does not disclose the claimed "question-probability selector," because a *selector* that allows a *user* to *select* a *setting*, is distinct from the automated and involuntary function disclosed in Hardy '705. Note particularly the claimed language "arranged to allow a user to select." In Hardy '705 the device, not the user, selects the frequency at which words appear. Moreover, the device disclosed in Hardy '705 does not teach the selection a *setting*, it simply selects the frequency at which individual words will appear. Accordingly, Applicant respectfully submits that all of the claim limitations of Claims 16, 19, 20 and 21 are not present in the art cited by the Examiner, and, therefore, a *prima facie* case of obviousness has not been established as required under MPEP §§ 706.02(j) and 2143.03. As such, Applicant respectfully requests that the rejection of such claims be withdrawn.

### ***Claim 18***

The Examiner has rejected Claim 18 under 35 U.S.C. §103(a) as being unpatentable over Cameron '624 as modified by Thomas '182. The Examiner contends that Cameron '624 discloses a question engine that can, "from the same group of questions stored in the missed-questions memory, develop and communicate to the user a plurality of scored sets of questions." Applicant respectfully disagrees with this characterization of Cameron '624. Cameron '624

discloses only that the user “may also select to review all the questions which were answered wrong or were left unanswered” (col. 5, lines 27-29), and that, in this regard, the engine can “repeat questions with wrong answers” (Fig. 7, S250). This language does not disclose the ability to develop and communicate a *plurality* of scored sets of questions from a missed-questions memory. Rather, Cameron ‘624 only discloses the ability to develop and communicate a single set of questions from a missed-questions memory, namely the set of questions consisting of those incorrect or unanswered questions from the immediately previous test. Accordingly, Applicant respectfully submits that Cameron ‘624 as modified by Thomas ‘182 does not teach or suggest all of the limitations of Claim 18, and that, as such, a *prima facie* case for obviousness has not been presented with respect to Claim 18. Therefore, Applicant respectfully requests that the refusal of Claim 18 be withdrawn. Further, the Examiner’s addition of Official Notice regarding the concept and advantages of storing only the most recent results for a set of chronologically ordered data does not overcome the lack of suggestion in the art of communicating a plurality of scored sets of questions from a missed-questions memory, as in the presently claimed invention.

#### **V. Conclusion**

Applicant respectfully submits that the independent Claims 1, 8 and 16, as well as all claims which depend therefrom are all allowable over the prior art of record, including the cited references. All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider all presently outstanding rejections and that they be withdrawn. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance.

If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment is respectfully requested.

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Respectfully submitted,



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